CSDS 500 and ECSE 500
Spring 2021 Colloquium

11:30AM to 12:30PM
Tuesday, March 23, 2021

Zoom Webinar ID: 998 2943 6376
Passcode: 357363

Artificial Intelligence, High Performance Computing, and Fundamental Physics

Abstract

Advances in Artificial Intelligence, particularly deep learning, have opened new research techniques to probe fundamental physics at higher precision than even before. Leveraging high performance computing techniques to accelerate the process has led to state of the art results in multiple domains. In this talk, I will summarize and discuss several of the ways AI and HPC have created novel research paths in fundamental physics, particularly in neutrino physics and nuclear theory. Topics include state-of-the-art pattern recognition, data-driven validation of AI models to reduce simulation/data discrepancy, and physics-informed, symmetry preserving surrogate models for nuclear wavefunctions.

Corey Adams
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Bio

Dr. Corey Adams is an assistant computer scientist at the Argonne Leadership Computing Facility at the U.S. Department of Energy's Argonne National Lab. Originally a high energy physicist working on neutrino physics problems, he now works on applying deep learning and machine learning techniques to science problems – and still neutrino physics – on high performance super computers. He has experience in classification, segmentation, sparse convolutional neural networks as well as running machine learning training at scale. Dr. Adams earned his PhD in Physics from Yale University in 2017.

This is to certify that _____attended this seminar. Certified by _____.
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